

OWNER'S MANUAL - 4300



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806-3444

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Congratulations on becoming a Lark owner! It's a dependable vehicle that will help you get around easily.

This owner's manual will help you get the most from your Lark. Read it thoroughly.

Be sure to complete the information table below. This will be your record of important information which will help if your Lark ever needs service. In addition, when seeking repair parts while your Lark is under warranty a copy of your bill of sale may be requested to verify warranty status.

Also be sure to carefully read the warranties in the back of this manual---we stand proudly on our quality, but you should be fully aware of what the warranty covers and how to obtain service.

#### OWNER INFORMATION

Owner \_\_\_\_\_  
Address \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_ Zip \_\_\_\_\_  
Serial Number \_\_\_\_\_ Date Delivered \_\_\_\_\_  
Purchased from \_\_\_\_\_  
City \_\_\_\_\_ State \_\_\_\_\_  
Telephone(     ) \_\_\_\_\_

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\*\*\*\*\*  
----- SAFETY FIRST -----

\* Avoid injury to yourself and possible damage to your Lark by observing  
\* the following rules:

- \* 1. DO NOT travel side-hill\*
- \* 2. DO NOT back down inclines\*
- \* 3. APPROACH curbs or other such obstructions slowly
- \* 4. DO NOT ride the Lark in a moving vehicle, no matter how it is  
secured
- \* 5. ON UNEVEN TERRAIN, or on untested INCLINES, it is wise to have  
someone who can assist you\*
- \* 6. ALWAYS set the hand brake when getting on or off. It is also  
recommended that you turn the speed limit switch OFF when not in  
use, to prevent accidental running of the motor.

\* For extra stability and traction, especially outdoors, we recommend  
\* spreading the wheelbase:

\* Pull the knob to permit telescoping each rear axle 3"  
\* to widen the stance a total of 6". Be sure that the  
\* telescoping axle latches into the hole.

\* Indoor use may require repositioning the rear wheels back to their  
\* narrower position in order to maneuver in tight quarters.

\*\*\*\*\*  
For Longest Service. . . .

1. Belts and pulleys can be ruined by careless running through gravel.  
The belt guards will help, but are no substitute for your being  
careful.
2. Tires--as on any vehicle--deserve to be treated well, too. Avoid  
undue acceleration, riding with the brake on, or neglecting tire  
pressure problems.
3. Don't run your battery down unnecessarily--its life will be shortened.
4. The Lark is not indestructible --- it will navigate terrain ir-  
regularities such as grass and ramps but should not be expected  
to do so for extended periods without risk of opening the circuit  
breaker, or possible motor burnout.

mate and un-mate the charger and battery connectors, note the following:

1. Battery connectors cannot be mis-mated except by force -- they are keyed for correct pin polarity. Turn the connector(s) until you feel the keys line up.
2. To connect, simply push together until the lock ring snaps.
3. To disconnect, squeeze the two flat finger pads on the lock ring, which will then clear the locks and allow the connector to be easily pulled apart.

DO NOT PULL BY THE WIRES: Damage will result!

#### SEAT SWIVEL

Your Lark is equipped with a seat swivel which allows you to rotate the seat 360 degrees, with locking points at 90 degree intervals. To release the lock, push the seat lever forward (rearward if on the left side) and begin your turn; let the lever go and the seat will lock at the next 90 degree notch.

#### SEAT ADJUSTMENT

The Lark seat can be adjusted for height, see the service section, paragraph 7.0.

#### LIFT UNIT (Model 4300L only)

The Lift unit replaces the seat post system and allows for 5" of lift by push-button control. To rise, push the UP button, DOWN to lower. When the limit has been reached the motor will continue to run (free wheeling emits a clicking sound) until the button is released. A fuse in the lift circuit is located on the left rear deck.

#### SPEED CONTROL

The Lark is provided with a Speed Limit Switch which is located on the rear deck to the right of the seat post. It is covered with a rubber boot. This switch has three positions:

1. Toward the back - The Lark will not operate beyond medium speed (2 speeds only), to prevent possibly going too fast indoors. This may also be helpful while learning to use the Lark.
2. Center - This switches the Lark OFF, to discourage unauthorized use. (This also disconnects the right battery from the left which could prevent proper charging of them together. Be sure the switch is NOT in the OFF position when charging. Set it in either forward or rearward position when charging.)

Toward the front - The Lark will function in all three forward speeds and both reverse speeds.

## OPERATING YOUR LARK

The Lark can be run in three forward speeds and two speeds in reverse. In reverse or the lowest forward speed, the two batteries are in parallel, delivering 12 volts to the drive motor. In the fast forward speeds, the batteries switch to a series connection for 24 volt operation. For safety reasons, there is no fast reverse.

When you release the lever, the Lark will stop, with the aid of dynamic braking. Dynamic braking reduces free-wheeling speed so that you can maintain better control when stopping or on mild inclines.

To disable dynamic braking for pushing manually, switch the speed limit switch OFF (center position) and squeeze the control lever, either left or right. The motor will not run, but the rolling friction will be reduced.

## TAKING YOUR LARK ON A TRIP

By Car--The Lark is readily transported in most conventional automobiles. The available cargo space will dictate whether and to what degree it must be disassembled.

1. Remove the tiller and control rod as a unit.
2. Remove the seat unit; on Model 4300L it will be necessary to release the swivel clamp and disconnect the lift control cord beneath the seat.
3. Disconnect, unlash and remove each battery in its case.
4. Be sure to set the handbrake once the Lark is in the car. If on a flat surface, such as in a van or station wagon, we recommend blocking it in place.

-----  
WARNING: NEVER SIT ON THE LARK IN A MOVING VEHICLE  
-----

### By Plane or other Common Carrier

Since the battery supplied is a gel-type, spillage will not be a problem. Furthermore, only gel-type batteries are allowed on airplanes and many other types of common carriers.

If travelling by air, at the time you make your reservation, notify the airline that you will be requesting "escort" service for your vehicle. This will assure its pickup and delivery at the boarding gate.

## MAINTENANCE

Your Lark will give you years of safe and dependable service in return for your regular maintenance and early attention to any developing problems. We recommend the following maintenance. If you use the Lark a lot, it may be to your advantage to perform this maintenance more frequently.

every Day or as needed

Maintain battery charge

Once each month

Check, clean battery terminals

Check for loose fasteners, signs of unusual wear

Once every three months

Clean the Lark

Check wires for wear, fraying or cracking

Once each year

Check and clean the drive head

Lubricate the tiller bearings. See service section 4.2

### ENERGY FOR YOUR LARK - BATTERY CARE

Battery life is most dependent upon the amount of use it is given, that is, if you drive your Lark a lot, your batteries will need replacement sooner than if you are a light user. Other factors which can reduce battery life are: irregular or inefficient charging, excessive temperatures, overcharging (incorrect charger or improper charger adjustment.)

Battery life can be as little as 6-8 months or well over a year.

#### When to recharge

It's OK to charge your batteries every day -- the automatic charger will protect them from overcharging. But it is unnecessary and inefficient to do so unless you use your Lark a lot.

To determine your level of need for charging, observe the Lark's performance until it begins slowing down. Then recharge. If this is typical, and has been, say, 4 or 5 days before showing signs of slowing, establish your overnight charging at 2 to 3 day intervals.

For the active user, it is not uncommon to charge every day.

If the slowdown comes at shorter and shorter intervals, even though activity with the chair has not increased, it may be a sign that the batteries are in need of replacement.

#### Charging Procedure

1. Set the hand control in the cross-wise "parked" position on the tiller handle to prevent inadvertent operation.
2. Set the hand brake.

NOTE: IT IS POSSIBLE to run the Lark even when charging. Avoid damage or embarrassment by assuring that the charger is disconnected before operating the Lark.



3. Connect the charger to the Lark BEFORE plugging it into the wall outlet. This will prevent unnecessary current surges on the mating connectors. For connector handling procedures, see page 5.

NOTE: The speed limit switch must be in either the 2-speed or 3-speed position. If it is in the OFF (center) position, the right battery will not be charged.

----- CAUTION -----

When charging, the batteries can emit potentially explosive gasses. Charge only in a well-ventilated area. DO NOT remove or connect battery terminals while charging.  
-----

4. The batteries are fully charged when the ammeter reading on the automatic charger drops to near zero and fluctuates, indicating the pulsating current which automatically maintains the charge.

NOTE: The automatic charger supplied with your Lark is adjustable for the automatic shutoff. Read instructions accompanying the charger. As shipped from the factory, it is adjusted for correct operation with new batteries

#### Battery Care

1. A crusty or powdery white substance may appear around or on terminals. If left for prolonged periods, this can reduce the quality of the connection and affect performance. To clean, use a solution of baking soda and water, with a toothbrush. DO NOT allow this solution to enter the battery vents. Rinse with clear water and dry.
2. Clean terminals and battery posts annually using a wire brush. When re-attaching terminals, be sure all connections are tight.
3. The Gel-cell batteries supplied are sealed and maintenance-free. DO NOT remove caps. DO NOT attempt to add water.

#### ABOUT THE BATTERY CHARGER

Your charger replenishes energy to your batteries -- energy used to power the Lark. It is automatic, that is, senses the charge status of the battery and shuts itself off when the batteries are fully charged. The more your Lark has been run, the more charging time will be needed to restore the batteries.

At some point in the life of your battery, the charger may need adjustment. This will be evident in a reduced range of your Lark. Please refer to the instructions in service section, paragraph 9.0.



## CIRCUIT BREAKER

A manually resettable circuit breaker is located inside each battery box, attached to the positive (+) terminal. Its purpose is to protect the wiring and battery against damage in the event of a short circuit.

If a breaker should open, it can be reset by pushing the button on it. If it opens again in a short time, there is a short circuit which must be found and corrected.

DO NOT DEFEAT the breaker; DO NOT REMOVE OR BYPASS; if any additional wiring is added to the Lark, it must not bypass the breaker.

## TIRES, WHEELS, BRAKES

### Wheel/Tire Care

Each wheel has a pneumatic tire with tube, and is supported by two sealed ball bearings which require no maintenance. Proper tire pressure is important, and should be maintained between 30 and 40 psi. Maximum is 60 psi.

It should rarely be necessary to fill tires, and frequent tire pressure checks will by themselves bleed enough air to affect pressure. It is really necessary to check pressure only if you suspect it is too low (affects running power of the Lark), or when filling, such as after repair.

Tire volume is small and pressure will build rapidly if it is filled with the typical service station compressor, so be careful. It is easy to overfill by as much as 10 psi and bleed the tire to its correct pressure. A hand or foot pump may make filling easier, or at least more controllable.

### Wheel/Tire Repair

Refer to service section paragraph 6.0 for removal/replacement instructions.

### Hand Brake

The parking brake is specifically for parking---not to be used to stop the Lark, but to keep it from rolling when stopped. Be sure to use it whenever you get on or off your Lark.

DO NOT RUN your Lark with the brake ON. It will cause unnecessary loading on your motor and excessive wear on the rear wheel and brake.

# S E R V I C E   S E C T I O N

## 1.0 TOOLS FOR WORKING ON YOUR LARK

A 7/16" nutdriver, 10" slip-joint pliers and a #2 Phillips screwdriver will allow you to take apart or adjust almost everything on your Lark. Retaining ring pliers are necessary to remove wheel.

## 2.0 HEAD REMOVAL

- 2.1 Disconnect both batteries.
- 2.2 Support the front of the Lark frame to prevent dropping as the drive head is removed, or tip it back so that the Lark stands on its rear wheels and the back of the seat.
- 2.3 Remove the head shroud.
- 2.4 Unplug the control head connection and remove the wire clip.
- 2.5 Remove the three bolts (7/16" wrench) -- two short ones and one longer with a spacer and another wire clip -- which hold the tiller socket flange to the drive head yoke.
- 2.6 When replacing head, be certain the spacer and long bolt are installed in the front hold of the fork.

All fasteners must be tight and both wire clips must be reinstalled. Check to make sure there is enough slack in the cable to allow full turning of the head, and that the cable will not rub frame parts when turning.

NOTE: If the drive head is removed with the tiller socket by disassembling the tiller bearings, be sure reassembly is done per 4.1 to prevent bearing damage.

## 3.0 DRIVE BELTS

### 3.1 Adjusting Belts

- 3.1.1 Motor belt - This is the smaller belt, on the upper right side of the drive head. To adjust, the head shroud must be removed. Loosen the two bolts holding the motor plate to the fork (7/16" wrench) and slide the motor fore or aft as needed, holding it while retightening.
- 3.1.2 Wheel belt - Adjustment can be made without removing the shroud. Loosen the two axle nuts (3/4" wrench) and rotate the notched adjusting plates as needed. BE ABSOLUTELY CERTAIN they are in matching notches -- count notches if necessary. Otherwise the belt will be damaged and the chair may lose power. Retighten the axle nuts.

NOTE: It is necessary to remove the head shroud to replace either belt.

- 3.2.1 Motor belt (part No. 4300-10) - loosen the two motor plate bolts (7/16" wrench) to permit moving the motor so that the new belt can be looped over the pulleys. Adjust to tension and retighten the bolts.
- 3.2.2 Wheel belt (part No. 4300-11) - disconnect both batteries and tilt the Lark up so that it rests in a vertical position on the rear wheels and bumper.
  - 3.2.2.1 Loosen the axle nuts (3/4" wrench) and remove the front wheel.
  - 3.2.2.2 Loosen the motor plate bolts (7/16" wrench) and remove the motor belt.
  - 3.2.2.3 With retaining ring pliers, carefully remove the retaining ring on the end of the jackshaft opposite the large sprocket.
  - 3.2.2.4 Remove the four Phillips-head screws holding the switch assembly to the fork casting and move it aside, away from the small jackshaft sprocket.
  - 3.2.2.5 Pull the jackshaft by its large sprocket to free the inner sprocket end from the bearing and permit belt removal or installation.
  - 3.2.2.6 Install the new belt on the jackshaft and slide it back into its bearing.
  - 3.2.2.7 Reinstall the jackshaft retaining ring in the groove, being sure to put the shaft washer between the bearing and retaining ring.
  - 3.2.2.8 Reinstall the switch assembly, making sure the switch bar is in place. Use the lock-washers.
  - 3.2.2.9 Holding the belt to clear the wheel axle, return the front wheel to the fork, then hook the belt over the sprocket. Adjust belt tension with the notched plates, BEING CERTAIN they are adjusted identically. Retighten the axle nuts.
  - 3.2.2.10 Re-install the motor belt, adjust tension and tighten the motor plate bolts.

## 4.0 LUBRICATION

All wheel and jackshaft bearings are sealed and permanently lubricated.

Spray silicone lubricants (such as WD-40) may be used on any other moving parts EXCEPT the tiller bearings, and should be applied whenever there is evidence of "stickiness" of movement of the parts. DO NOT apply lubricants to the drive belts.

4.1 To lubricate the rear axle latch pins, support the rear of the chair and remove the axle assembly from its socket. Spray the lubricant on the pin protruding into the socket tube and work it a few times.

4.2 To lubricate the tiller bearings, refer to the diagram at the right. It will be necessary to remove the head. Use a good quality bicycle-type grease, preferably waterproof. It is wise to thoroughly clean the bearings and races with a solvent and allow to dry before applying grease. When reassembling BE SURE THE BEARINGS ARE ORIENTED PER THE DIAGRAM. Improper orientation will ruin the bearings. See below for instructions on adjusting the head bearing.

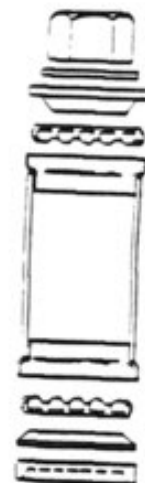


Fig. 4.1

## 5.0 HEAD BEARING ADJUSTMENT

If the head bearings are too tight, the tiller will not steer easily and the bearings themselves will wear out prematurely. If too loose, the head will knock when starting up in reverse and steering may be less stable.

5.1 To adjust, tighten the knurled nut with slip-joint pliers. Hand tighten the large hex nut above it. Then "back-off" the knurled nut with pliers to snug it up against the hex nut. Check and readjust as necessary.

## 6.0 WHEEL REMOVAL/REPAIRS

6.1 Rear Wheels: Pull the axle extension latch pin and remove the rear wheel assembly for easy handling at a workbench. Remove the plastic hub cap, which will likely be destroyed in the process. Spares are provided, however, and a new cap should be installed after work is completed.

6.1.1 With retaining ring pliers, carefully remove the wheel retaining ring and loading washer from the axle. DO NOT spread the retaining ring any more

than to be removed. Excessive spreading will prevent its securing the wheel when replaced. Slide the wheel off the axle. Remember to replace the washer when reinstalling the retaining ring.

## 6.2 Front Wheel

- 6.2.1 Disconnect both batteries.
- 6.2.2 Loosen the two axle nuts (3/4" Wrench) and rotate the notched belt tension adjusting plates to slacken the drive belt.
- 6.2.3 Pull the belt off the sprocket and loop it outside the fork to clear the axle.
- 6.2.4 Remove the wheel, then remove one of the axle retaining rings carefully (see Rear Wheels instruction above) and slide the axle out.

## 6.3 Repairs

- 6.3.1 Inner tubes can be repaired in the conventional way after removing the wheel.
- 6.3.2 Bleed any remaining air pressure from the tire, and disassemble the two-part rim. There are four bolts and locknuts, eight washers.
- 6.3.3 When reassembling, be certain the tube is not pinched in the rim by filling with a small amount of air to provide shape to the tube, and be sure that all nuts and bolts are tight (70 lb. in. torque).

## 7.0 SEAT HEIGHT ADJUSTMENT

The height of the seat is adjustable to the rider's needs. Refer to the drawing at the end of this section.

- 7.1 To adjust height, locate the seat post collar at the desired hole and be sure to tighten the bolt. Some users may prefer to make the seat post nonremovable: If so, eliminate the collar and bolt directly through the hole in the pedestal. This hole is vacant if the collar is used.

## 8.0 BATTERY EVALUATION/REPLACEMENT

- 8.1 Signs of battery failure are as follows:

- |  |                                   |
|--|-----------------------------------|
| 8.1.1 Range is less than before. Unable to retain as much charge.                      | Adjust charger or replace battery |
| 8.1.2 Charger will not shut off. Shorted cell in battery. (check voltage without load) | Adjust charger or replace battery |

8.1.3 Heating or swelling of battery, sometimes accompanied by acrid odor, cell cap popped off, or evidence of leakage on top of battery. Replace battery

8.2 Load Testing: a sure test of a battery's condition can be performed at any ordinary auto service station and takes only seconds to do. This is a "load Test" in which the battery voltage is measured under a heavy load. Before testing, your battery should be fully charged. If the load test voltage is below 9 volts, the battery should be replaced.

8.3 Installing Batteries, NOTE: A Gel-Type battery is supplied with the Lark, and we recommend this type when replacement becomes necessary.

8.3.1 Remove the battery box cover.

8.3.2 Place the battery in the battery box.

8.3.3 Attach the BLACK wire to the negative (-) battery terminal, and the RED to the circuit breaker, which is connected to the positive (+) terminal. Make sure all connections are tight.

8.3.4 NEVER remove Gel-Cell battery caps. DO NOT attempt to add water.

## 9.0 CHARGER EVALUATION/ADJUSTMENT

### 9.1 Normal charging:

9.1.1 Meter will go to about 6 amps initially, unless the battery has just been charged. Any running or even a few minutes off charge will call for a beginning full charge rate.

9.1.2 After a while, the meter reading will go down.

9.1.2.1 If the battery is at nearly full charge initially, the meter will drop to zero in a short time---possibly in a few minutes.

9.1.2.2 If the battery is nearly discharged, the meter will remain high for several hours, dropping to lower readings, eventually going to zero.

9.1.3 When the meter reaches zero, it will flicker, indicating that the battery is being maintained at full charge. As factory adjusted this represents a terminal voltage of 14.3 volts. This may be adjusted upward for an aging battery.



9.2 Charger Adjustment, as your battery ages, it is necessary to adjust the charge control voltage to compensate for deterioration of the plate surfaces, known as sulfation. Use the following procedure:

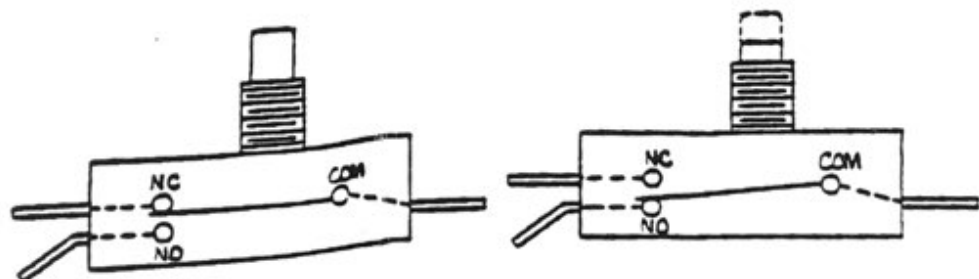
- 9.2.1 Adjust the INCREASE control on the back of the charger to its maximum (full clockwise).
- 9.2.2 Connect the charger to the battery and plug it in. Allow it to charge 3-4 hours or until the meter stabilizes for more than 1 hour. Without disconnecting, adjust the INCREASE control counter-clockwise until the meter just begins flickering near the zero mark. The charger is now adjusted.

## 10.0 TROUBLESHOOTING

If your Lark fails to run well, the problem can usually be isolated to mechanical or electrical, and the chart (10.3) will help.

### 10.1 Note on Troubleshooting

- 10.1.1 When testing the motor with power, prop the front of the Lark to lift the drive motor off the ground or raise it "back on its Haunches", standing it vertically on its rear wheels and the back of the seat.
- 10.1.2 Avoid catching fingers in the belts when belt guards are removed.
- 10.1.3 Any apparent switch failure could be open or short-circuited wiring instead. Look for worn insulation, or broken, loose, or disconnected wires.
- 10.1.4 The drawing below illustrates the internal action of the switches.



- 10.1.5 S1, S2, S3, etc. refer to the switches, which are numbered on all diagrams and on the switches themselves.
- 10.1.6 The switches on the Lark are very rugged and will be a rare cause of trouble. A switch which has failed can usually be identified by a change in sound or feel as it is actuated.



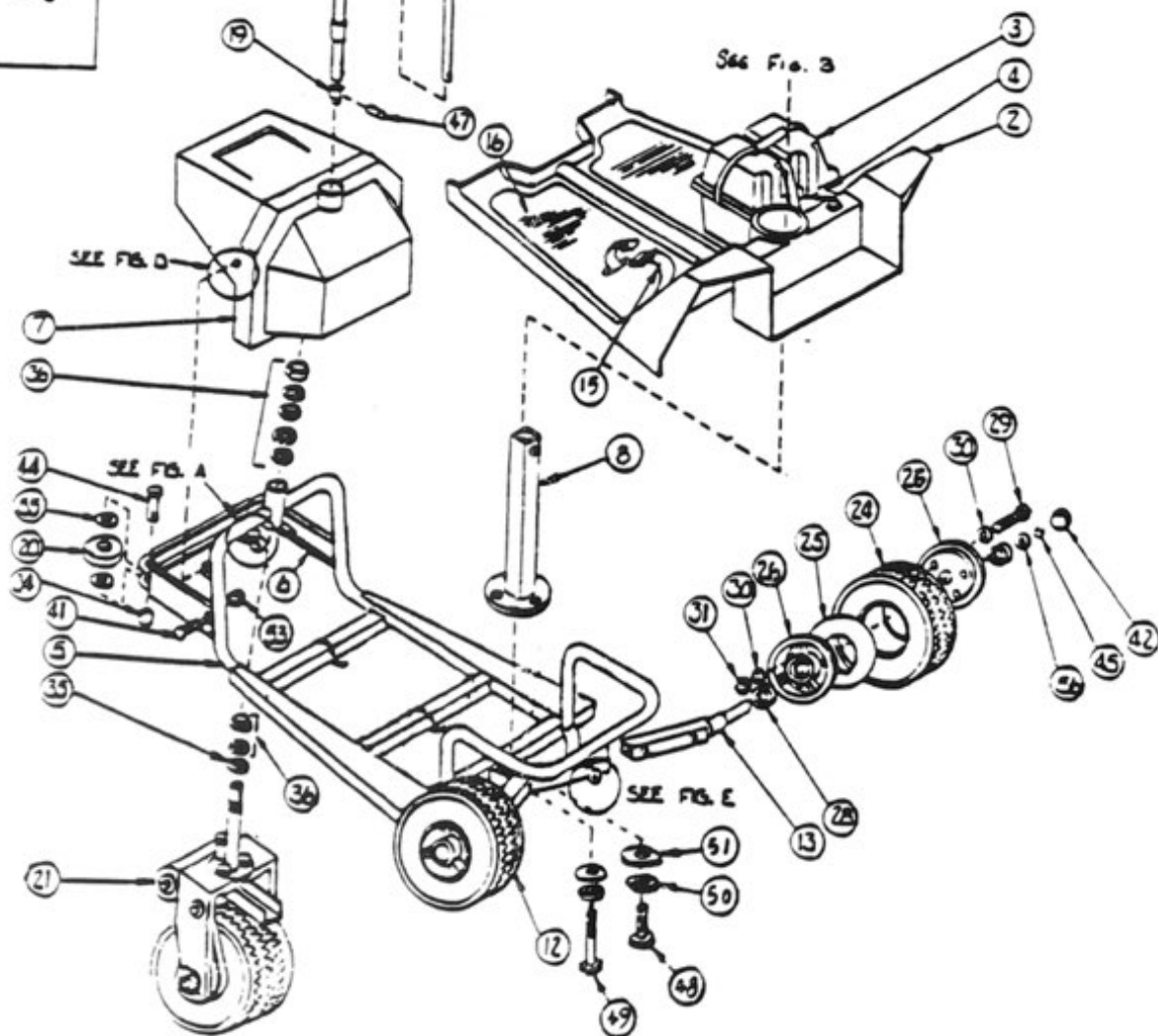
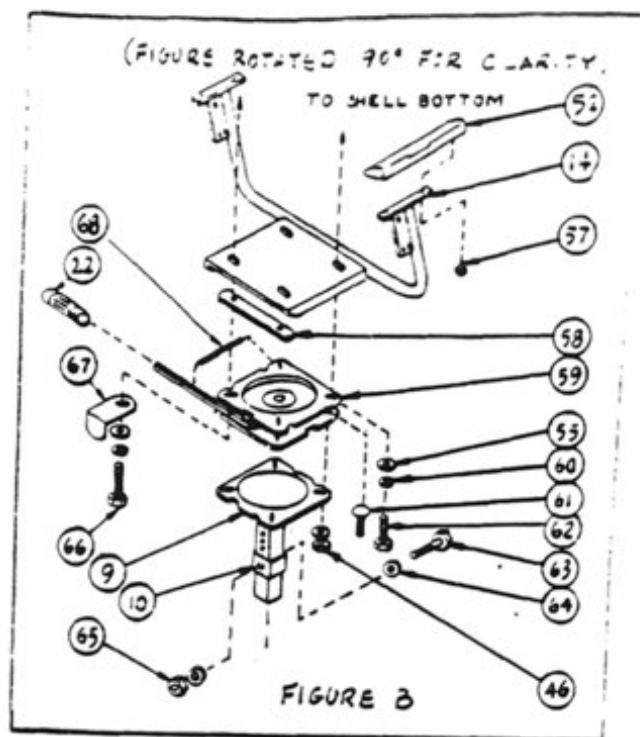
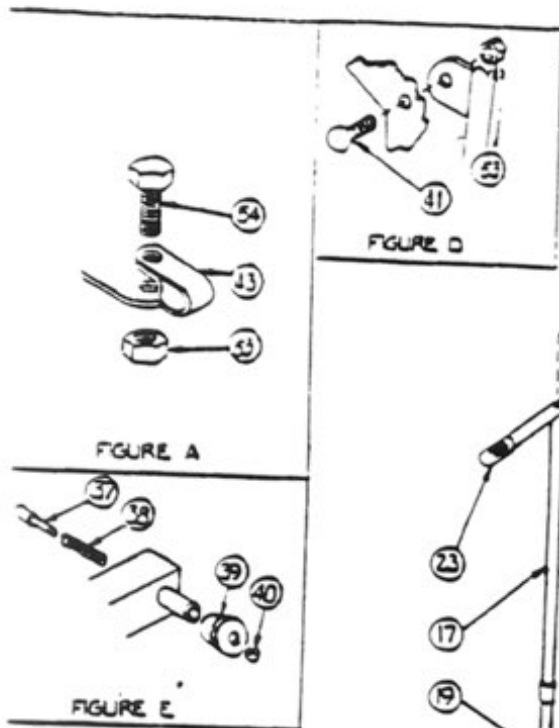
- 10.1.7 The chassis is insulated from the wiring. If voltage appears between the chassis and any of the wiring, insulation has broken down somewhere.

## 10.2 Replacing Switches

- 10.2.1 NOTE: Any washers must be in place when the switch is replaced.
- 10.2.2 When working on the wiring or switches, it is first important to disconnect the drive head or the battery, to prevent inadvertent short circuits. Merely switching the speed limit switch OFF is not recommended.
- 10.2.3 Make note of the wire connections, and also refer to the wiring diagram to be sure wires will be reconnected properly.
- 10.2.4 Disconnect wires by pulling the tabs (not the wires), then remove the nut holding the switch. Remove the switch.

# 10.3 Troubleshooting Chart

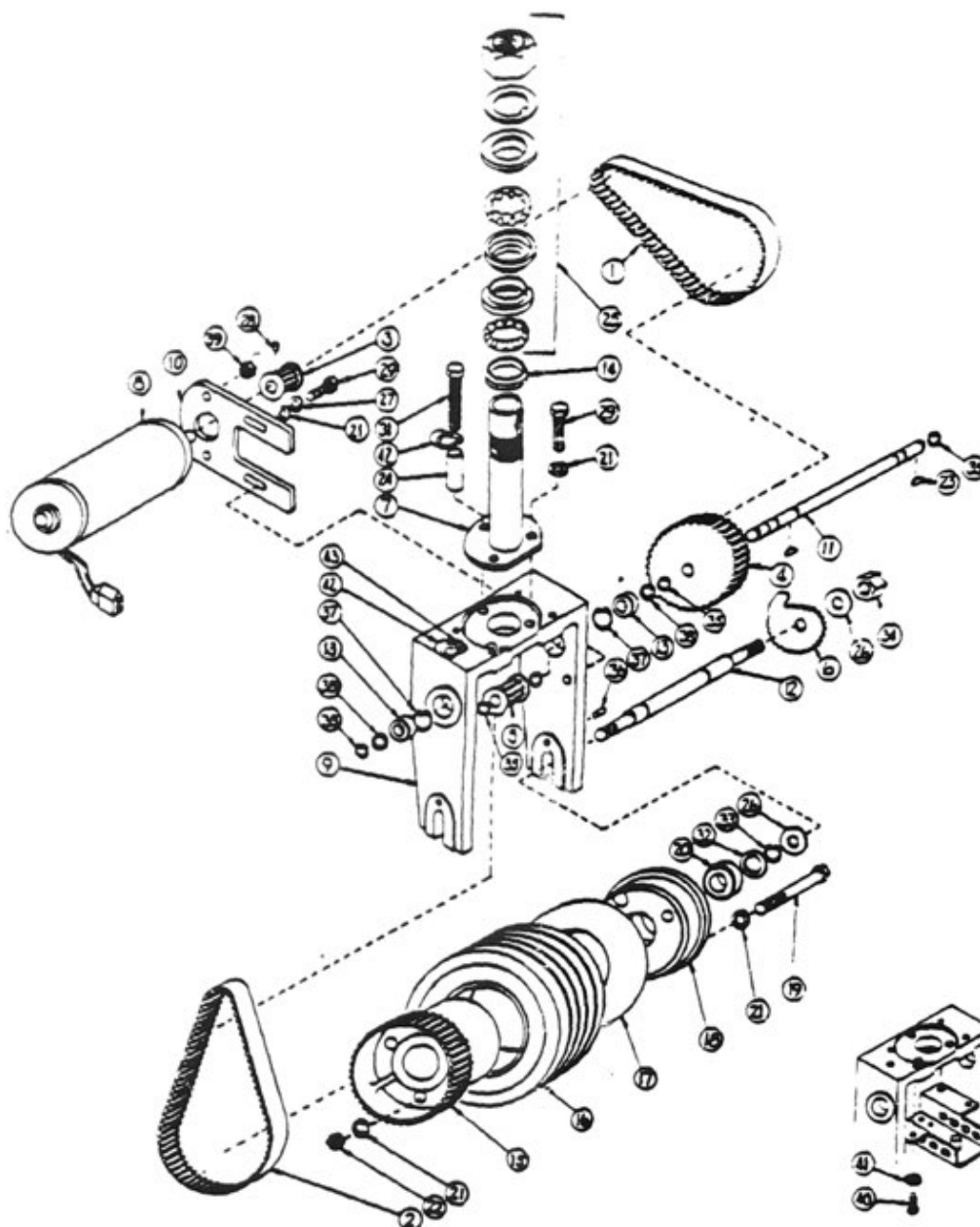
SYMPTOM	COMMENTS	PROBABLE CAUSE	SOLUTION/COMMENTS
Gradual loss of power	Weak in all speeds	Low Charge	Recharge batteries
		Charger or charger connections	Charge with Speed limit switch in 2 or 3 speed position. If charger meter reads zero -check wall outlet -check wiring
		Tire pressure	
Loss of all power	Free wheeling	Drive belts	Check both
	Motor dead	Speed Limit Switch OFF	
		Batteries not plugged in	
		Motor connector	
No forward high speed	Runs lo & med, stops at high	Right battery circuit is open	Check battery connection Check circuit breaker; reset Check head connection (4 wire) Check speed limit switch terminals
No forward med & high	Runs low only	Left battery circuit is open	
No Low speed	Med & Hi OK or only med in reverse	Resistor (R1 if Reverse R2 if forward)	R1 also affects dynamic braking
Lift Dead (model 4300L only)	Runs UP or DOWN only	Lift switch or wiring	Check switches for identical "feel"
	Does not run either way	Fuse	Replace
Motor pulley rubs on bumper		Bumper misadjusted or bent	
"Clunk" when stopping forward or starting reverse		Loose head bearing	Adjust. See 5.0
Ticking		Loose motor pulley	Tighten set screw



# LARK (4300) PARTS LIST

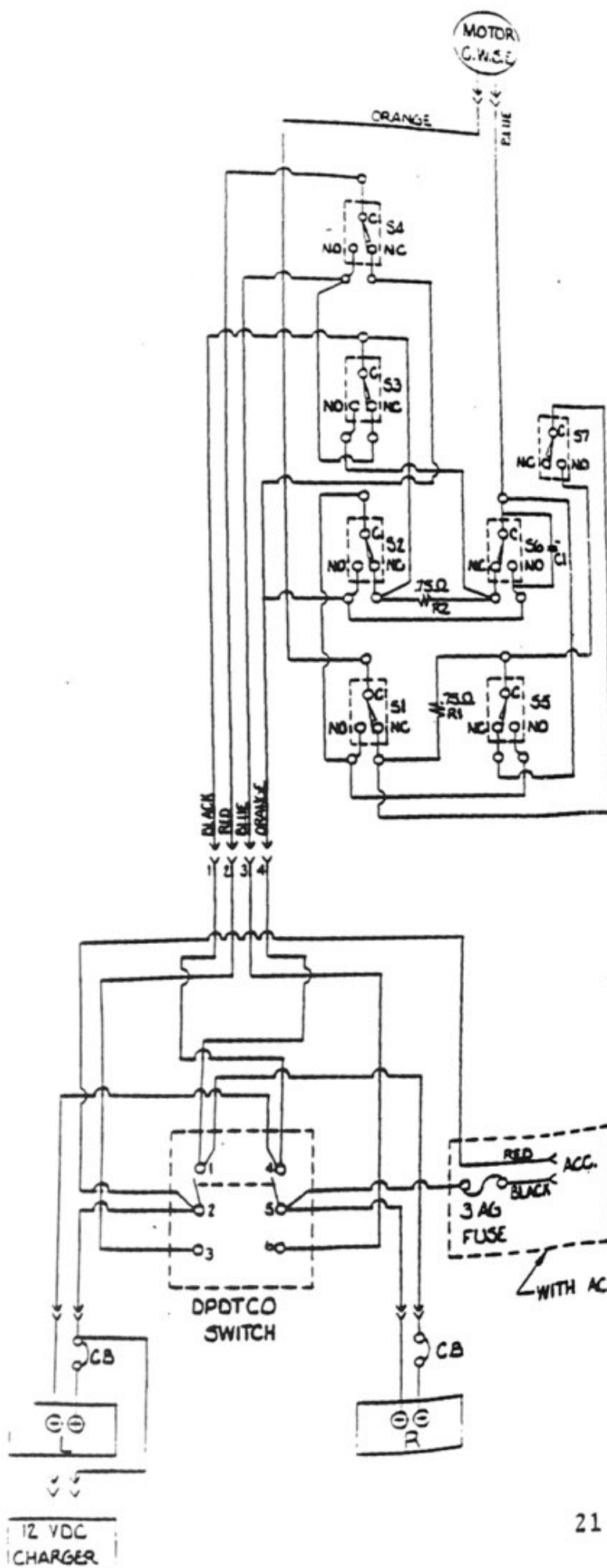
ITEM	REQ'D	PART NO.	DESCRIPTION	ITEM	REQ'D	PART NO.	DESCRIPTION
1	1	0671-19	Seat (Alone)	29	8	0001-36	1/4-20 x 2 Hex Bolt
(not	1	0671-119	Seat Upholstery	30	16	0150-17	Washer
shown)	1	0671-118	Back Upholstery	31	8	0100-26	Lock Nut
	1	4300-289	Seat, Complete w/Upholstery		2	4300-271	Wheel Complete With Tire, Tube
2	1	4300-04A	Deck	34	2	0603-07	Clasp Ring
3	2	4300-08	Battery Cover	35	1	4300-02	Cone
4	2	4300-207	Battery Box (Bottom) w/Handle	36	1	0351-05	Head Set
	1	4300-207L	Battery In Box With Top, Complete, L	37	2	6000-44A	Plunger
	1	4300-207R	Battery In Box With Top, Complete, R	38	2	0603-01	Spring
5	1	4300-280	Frame	39	2	6000-176	Knob
6	1	4300-181	Front Bumper	40	2	0604-04	E-Ring
	1	4300-281	Bumper, Complete w/Wheels	41	6	0002-53	1/4-20 x 3/4 Truss Head
	*	4300-273	Bumper With Footrests	42	2	0501-03	Hub Cap
7	1	4300-206	Shroud w/Label	43	1	0620-06	Tube Clamp
8	1	4300-147	Pedestal	44	2	0600-31	5/16 x 2 3/8 Clevis Pin
9	1	4300-146	Seat Post	45	2	0604-108	Retaining Ring
10	1	0459-107	Collar	46	5	0100-26	1/4-20 Lock Nut
12	1	4300-282	Left Axle w/Wheel & Brake	47	1	0611-15	1/8 x 9/16 Spring Pin
	1	4300-182A	Left Axle w/Brake Mtg. Plate	48	2	0001-44	5/16-18 x 1 Hex Bolt
13	1	4300-283	Right Axle w/Wheel	49	1	0001-45	5/16-18 x 2 Hex Bolt
	1	4300-183A	Right Axle	50	3	0150-36	5/16 Split Washer
14	1	4300-117	Arm Assembly	51	3	0150-19	5/16 Flat Washer
15	2	4300-284	Battery Tie-Down	52	2	0671-122	Arm Board
16	1	4300-49L	Deck Treed, Left	53	2	0100-26	1/4-20 Lock Nut
	1	4300-49R	Deck Treed, Right	54	1	0001-08	1/4-20 x 1/2 Hex Bolt
17	*	4300-291	Tiller Assembly 29" Overall	55	12	0150-16	1/4 Flat Washer
	*	4300-191	Tiller Only 29" Overall	56	2	0150-18	Precision Washer
	1	4300-291A	Tiller Assembly 26" Overall	57	4	0005-07	#14 x 3/4 Wood Screw
	1	4300-191A	Tiller Only 26" Overall	58	1	0480-105	Seat Tilt Spacer
	*	4300-291B	Tiller Assembly 23" Overall	59	1	4300-48	Swivel
	*	4300-191B	Tiller Only 23" Overall	60	4	0150-31	1/4 Split Lockwasher
18	1	4300-192	Control Lever (Specify Length)	61	4	0003-01	1/4-20 x 3/4 Carriage Bolt
19	1	4300-125	Control Lever Clevis Assembly	62	2	0001-20	1/4-20 x 3/4 Hex Bolt
20	2	0302-01	Wheel	63	1	0001-34	5/16-18 x 2 1/4 Hex Bolt
21	1	4300-290	Power Head	64	2	0150-20	5/16 Heavy Washer
22	2	0619-02	Grip	65	1	0100-32	5/16-18 Locknut
23	2	0619-03	Grip	66	2	0001-01	1/4-20 x 1 Hex Bolt
24	2	0305-118K	Tire, Black	67	1	0484-111	Handle Stop
25	2	0305-12	Inner Tube	68	1	0603-15	Spring
26	4	0305-243	Wheel-Half Rim With Bearing				
28	4	0351-01	Ball Bearing				

\* Indicates Optional



POWER HEAD ASSEMBLY PARTS LIST

ITEM	REQ'D	PART NO.	DESCRIPTION	ITEM	REQ'D	PART NO.	DESCRIPTION
1	1	4300-10	Motor Belt	23	2	0612-03	No. 304 Woodruff Key
2	1	4300-11	Wheel Belt	24	1	0460-107	Spacer
3	1	0305-11	Motor Sprocket	25	1	0351-05	Tiller Bearing Headset
4	1	0305-134	Jackshaft Sprocket, Driven	26	4	0150-34	1/2 Flat Washer, SAE
5	1	0305-33	Jackshaft Sprocket	27	2	0150-31	1/4 Split Lockwasher
6	2	4300-139	Tensioner	28	1	0006-03	10-32 x 1/4 Set Screw
7	1	4300-170	Tiller Socket	29	4	0001-13	1/4-20 x 3/4 Hex Bolt Grade 5
8	1	4300-294	Motor	31	1	0001-06	1/4-20 x 1 3/4 Hex Bolt Grade 5
9	1	4300-101	Steering Fork	32	2	0150-18	Precision Support Washer
10	1	4300-138	Motor Bracket	33	2	0604-108	Retaining Ring
11	1	0341-104	Jackshaft	34	2	0100-41	1/2-20 Nut
12	1	0341-103	Front Axle	35	5	0604-15	Retaining Ring
13	2	0351-104	Jackshaft Bearing	36	2	0602-05	Drivlok Pin
14	1	4300-02	Cone	37	2	0604-14	Internal Retaining Ring
15	1	0305-242	Drive Wheel Half-Rim With Bearing	38	2	0150-35	Precision Washer
16	1	0305-116Y	Tire, Grey	39	2	0100-33	10-32 Lock Nut
17	1	0305-12	Inner Tube	40	4	0002-48	10-24 x 5/8 Phillips
18	1	0305-242	Wheel Half-Rim With Bearing	11	4	0150-22	No. 10 Split Washer
19	4	0001-36	1/4-20 x 2 Hex Bolt	12	2	0620-06	Tube Clamp
20	2	0351-01	Ball Bearing	13	1	0002-19	1/4-20 x 3/4 Phillips
21	12	0150-17	1/4 SAE Flat Washer		1	4300-241	Switch Assembly, Complete
22	4	0100-26	1/4-20 Lock Nut		1	4300-120	Switch Actuator Lever



- SWITCH 1 } "SLOW" FORWARD  
 2 }  
 1 }  
 2 } "MEDIUM" FORWARD  
 3 }  
 1 }  
 2 } "FAST" FORWARD  
 3 }  
 4 }  
 5 } "SLOW" REVERSE  
 6 }  
 5 }  
 6 } "FAST" REVERSE  
 7 }

#### PARTS LIST (ELECTRICAL PARTS)

PART NO.	DESCRIPTION
4300-241	Complete Power Head Switch Assembly With Connector
0700-01	Switch (S1, S2, S3, S4, S5, S7)
4300-62	Switch With Capacitor (S6)
0713-03	Capacitor
0707-17	Resistor (R1, R2)
0700-02	3-Position DPDT (Special Limit) Switch
0700-02A	Rubber Boot For Above
4300-295	Lift Actuator Assembly
4300-264	Lift Pendant Control With Cord
2000-03	Control Switch
0709-08	Fuse SFE-20 Amp
0710-19	Battery - Gel Cell U-128
4300-256	Charger 12V Automatic
0703-37	Male Connector Pin For Black Connector
0703-38	2-Pin Connector Body For Above, With Flange
0703-43	4-Pin Connector For Above
0703-39	Female Connector Pin For Black Connectors
0703-36	2-Pin Connector Body For Above
0703-42	4-Pin Connector Body For Above
0703-55	Bullet Connector Male
0703-56	Bullet Connector Female

WITH ACCESSORY ONLY

## WARRANTIES

### Limited Warranty on the Vehicle

Ortho-Kinetics warrants to the original consumer of this vehicle that if any part thereof proves defective in material or workmanship within one year from the date of original purchase such defective part will be repaired or replaced (at the company's option) free of charge.

This warranty specifically excludes the following:

1. Inner tubes
2. Batteries or Battery Chargers
3. Damage caused by spillage or leakage of battery fluid
4. Labor or other charges to make repairs
5. Defects caused by unauthorized work performed on the vehicle

### Limited Warranty on Batteries

Ortho-Kinetics warrants to the original consumer of batteries that if proven defective in material or workmanship, replacement will be made on the following basis:

If the defect is reported within:

Credit against replacement battery:

90 days of delivery	100%
90 - 180 days of delivery	50%
181 - 365 days of delivery	25%
Beyond one year	0%

This warranty specifically excludes batteries which are:

1. Used for any other purpose than as the power source for the vehicle for which they are supplied.
2. Charged using any battery charger other than that supplied with the vehicle (or an exact equivalent).
3. Allowed to remain in more than 70% discharged condition for more than 30 days.
4. Labor charges for installation.

### Limited Warranty on Battery Chargers

Battery Chargers are warranted directly by their manufacturer who includes the warranty in their instructions.



# Ortho-Kinetics, Inc.

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## 14 Month Limited Warranty

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Ortho-Kinetics warrants to the original purchaser of this product from the date of purchase, that if any part, other than those exceptions listed below, thereof proves defective in manufacturing materials or workmanship within fourteen (14) months from the date of the original purchase, such defective part will be repaired or replaced (at the company's option).

*Exceptions by product type include:*

### Lift Chairs:

1. Lift chair motors and bases which carry a twenty four (24) month warranty.
2. Upholstery which carries a 30 day warranty.

### Three Wheelers:

1. Maximite batteries which carry a six (6) month warranty.
2. Belts, tires, tubes and connectors are not covered by this limited warranty.
3. Upholstery which carries a 30 day warranty.

### Quadra Wheelchairs:

1. Quadra wheelchairs (see Quadra Medical Corporation warranty policy).

### Pediatric Rehab Products:

1. Upholstery which carries a 30 day warranty.

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## OTHER ITEMS OR SERVICES WHICH ARE NOT COVERED BY THIS WARRANTY

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1. Labor, service calls or other charges to make the repairs on the product.
2. Defects caused by unauthorized work performed on the product or part failure resulting from failure to maintain the product as recommended.

*To exercise this limited warranty, the consumer should proceed as follows:*

1. Return the product to the dealer for warranty repair work. Ortho-Kinetics will repair or replace (at the company's option) the said part(s). The dealer is responsible for the labor.
2. If the dealer is unable to provide warranty service, the dealer may return the product, freight prepaid, to the factory. The dealer will then be billed normal labor charges.

*Ortho-Kinetics reserves the right to make changes at any time without notice.*

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## Warranty Limitations and Exclusions

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*To the maximum extent permitted by applicable law, this limited warranty excludes any claim for incidental or consequential damages and is in lieu of any implied or other warranties. This warranty gives you specific legal rights. You may also have other rights by law which vary from state to state.*

Ortho-Kinetics, Inc.  
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1/1/80 Ortho-Kinetics, Inc.